The Rivah Digest

A quarterly newsletter of the Rappahannock Area Health District

RAHD Rappahannock Area Health District
CARING FOR A HEALTHY COMMUNITY

What's in your backyard? mosquito and tick-borne diseases

July 2004

West Nile Virus season is here and the mosquitoes are biting! Three positive horses have been identified in Culpeper, Albemarle and Prince Edward Counties. WNV positive birds have been found in Norfolk and Chesterfield. Emily Hale, the Rappahannock Area WNV specialist has been trapping, identifying and submitting mosquitoes for testing, but none have been found positive this season. WNV is spread through the bite of an infected mosquito, usually *Culex spp and Aedes aldopictus* in Virginia. Twenty-seven cases of WNV and one death were confirmed in Virginia in 2003. Persons over fifty are at the greatest risk of developing serious forms of the disease.

Cases of arboviral disease are classified either as neuroinvasive or non-neuroinvasive. Neuroinvasive disease can occur in three forms: 1) arboviral meningitis - fever, headache, stiff neck, and pleocytosis in the CSF; 2) arboviral encephalitis - fever, headache, and altered mental status ranging from confusion to coma; or 3) arboviral myelitis - fever and limb paresis or flaccid paralysis. Non-neuroinvasive disease such as West Nile fever (WNF), is usually a non-specific, self-limited, febrile illness that occurs 2-6 days after the bite of an infected mosquito. Typical cases are characterized by the acute onset of fever, headache, myalgias, and fatigue. Maculopapular rash and lymphadenopathy generally are observed in less than 20% of cases.

The state laboratory, DCLS, will only conduct testing on patients with West Nile Neuro-invasive Disease (WNND) and not WNF. DCLS will also conduct testing for St Louis Encephalitis (SLE), LaCrosse Encephalitis (LAC) and, Eastern Equine Encephalitis (EEE).

Recommended Testing Criteria for Suspect Case of WNV - Any adult or pediatric patient **hospitalized** with viral meningitis or encephalitis with or without associated muscle weakness:
- Fever > 38 °C or 100 °F, and
- Altered mental status (altered level of consciousness, agitation, lethargy) and/or other evidence of cortical involvement (e.g., focal neurologic findings, seizures), and
- CSF pleocytosis with predominant lymphocytes and/or elevated protein and a negative gram stain and culture, and/or
- Muscle weakness (especially flaccid paralysis) confirmed by neurologic exam or by EMG.

LYME Disease cases on the rise

An increase in Lyme Disease (LD) cases has been reported earlier this year than in previous years. RAHD has received ten reports this year compared to one in 2003 and five in 2002. These include both suspected and confirmed clinical and lab diagnosed cases. However, not all of these cases can be considered in statewide Lyme surveillance data. Only three of the reported cases met the criteria for surveillance. For surveillance purposes the case definition of LD is defined as physician-diagnosed erythema migrans (EM) greater than or equal to 5 cm in diameter **or** at least one objective manifestation of late LD (musculoskeletal, cardiovascular or neurologic) **with** laboratory confirmation of *B. burgdoferi* infection using a two-tiered assay (i.e. EIA and Western blot). Diagnosis is based primarily clinical findings.

Lyme Facts:
- **Agent:** spirochete *Borrelia burgdorferi*;
- **Vector:** bite of the black legged Ixodes species tick, the deer tick; the tick must be attached for 36-48 hrs to transmit the disease
- **Incubation:** Early localized LD occurs 3-30 days after tick bite and symptoms include erythema migrans (a bulls-eye like rash around the site of the tick bite) accompanied by muscle aches, headache, fever and lymphadenopathy.
- **Treatment:** for early localized LD is doxycyclin or amoxicillin x 14-21 days. Early disseminated and late LD are treated for 14-28 days.

Prevention for WNV and Lyme involves: 1) reducing exposure to ticks through landscaping practices by removing brush and leaf litter and creating a buffer zone between forest and lawn recreational areas, 2) removing ticks within 48 hours of attachment, 3) avoiding mosquitoes and removing standing water to eliminate mosquito breeding sites and 4) use of DEET-containing products (30% children, 50% adults) and wearing long, light-colored clothing when outdoors.

Health Departments

- *Rappahannock District 540-899-4797*
- *Caroline 804-633-5465*
- *King George 540-775-3111*
- *Fredericksburg 540-899-4142*
- *Spotsylvania 540-582-7155*
- *Stafford 540-659-3101*

After hours reporting:

- *Communicable Disease & Outbreak Reporting @ pager 540-372-2815*
- *Environmental Pager 540-899-8601*
- *Rabies Pager 540-372-2562*
- *New Toll-free number for public health & Bioterrorism events* ***866-531-3068***

Changes in Disease Reporting Regulations for Medical Providers

Code of Virginia § § 32.1-12 and 32.1-35 - The **final version of the amendment to the Regulations for Disease Reporting and Control** was printed in Volume 20, Issue 21 of the Virginia Register on June 28, 2004, and changes will take effect July 28, 2004. Summary of changes include:

- Reducing the time requirement for reporting diseases to the health department from **seven days to three days**
- Updating the reportable disease list
- Reducing the time frame requirement for reporting certain diseases
- Adding a requirement to report diseases that may be due to a biological agent used as a weapon

Diseases Added
Diseases caused by agent that may have been used as a weapon
Hepatitis B, chronic
Monkeypox
Severe Acute Respiratory Syndrome (SARS)
Vaccinia disease or adverse event

Conditions Removed
Mantoux tuberculin skin test reaction >=10mm

NEW RAPIDLY REPORTABLE DISEASES (report to health department within 24 hours)
Brucellosis
Diseases caused by agent that may have been used as a weapon
Rubella
Tularemia
Unusual occurrence of disease of public health concern
Vaccinia disease or adverse event
Vibrio infection
Viral Hemorrhagic Fever

Procedure for quarantine and isolation
A new law provides a procedure for the State Health Commissioner to issue orders of quarantine or isolation when a person(s) or an affected area in Virginia have been known to be exposed to, or infected with, or may reasonably be suspected to be exposed to, or infected with, a communicable disease of public health threat. The State Health Commissioner has sole power and cannot delegate.

The law differentiates a communicable disease of public health significance from a communicable disease of public health threat. The former would include HIV infection, TB and bloodborne diseases. A public health threat includes diseases that can be transmitted readily and result in death or serious impairment. Quarantine and isolation may apply to persons, groups or affected areas. The law details the procedures for issuing and appealing orders of quarantine or isolation. The Commissioner or his designee can review health records of persons subject to an order and to make use of any public or private property, building or facility to implement any order of quarantine or isolation if necessary.

To view the entire House Bill 1483, visit the Virginia General Assembly's web site: http://legis.state.va.us

Environmental Testing @ Fairview Beach

The King George Health Department is in its second year of collecting water samples at Fairview Beach as part of an Environmental Protection Agency (EPA) funded beach monitoring grant titled Virginia Beaches Environmental Assessment and Coastal Health Program (BEACH). Monitoring at the Fairview site is conducted once a week by Erin Bess, Environmental Health Specialist. Samples are sent to a private laboratory and analyzed for enterococci bacteria. High bacteria counts in recreational waters can increase swimmers' risk of contracting gastrointestinal disease, respiratory, ear, eye and skin infections, and other diseases. Levels of bacteria should not exceed the EPA standard of 104 bacteria counts per 100 mL of water. If levels exceed the standard, notification of residents and the public is done through the health department and contact with the Fairview Beach Association. Signs are posted to alert the public that a Swimming Advisory is in place and elevated bacteria counts in the water may pose an increased health risk to swimmers, especially those who are immunocompromised. After two consecutive days of satisfactory sample results, the advisory is lifted. Fairview Beach is located in the tidal portion of the Potomac River and is visited by approximately 120 people each day during the swimming season.

Are your patients inquiring about immunizations, diseases and safety when traveling to other countries?

Have them call our Overseas Travel Clinic at Fredericksburg Health Department 540-899-4142

Check out the new travel guidelines published by the CDC: www.cdc/.gov/travel

Foodborne Illnesses

Summer is here—and that means more picnics, grilling, BBQs and eating out. However, if foods are mishandled or stored at improper temperatures, certain foodborne illness can result. These illness can be a result of viruses, bacteria or toxin accumulation. Foodborne illness is responsible for nearly 300,000 US hospitalizations and nearly 5000 deaths annually. Foodborne illness should be considered in differential diagnoses if patients present with GI symptoms and **stool specimens should be obtained!!!** MWH Laboratory sends isolates to the state lab, DCLS, for serotyping and PFGE DNA fingerprinting. Results are sent to the CDC for identifying clusters or multi-state outbreaks.

Prevention Tips = Cook meats and poultry thoroughly and use a thermometer (hamburger to 155ºF for 15 sec; poultry to 165ºF for 15 sec). Only purchase seafood from reputable commercial sources. Maintain proper holding temperatures. Adhere to excellent hand hygiene practices and avoid cross contamination.

Agent	Incubation	Signs	Characteristics	Lab Testing	Treatment
Staphylococcus aureus	1-6 hours	sudden onset V,N	improperly refrigerated foods	If outbreak - stool culture	supportive
****Clostridium botulinum (BOTULISM)***	12-72 hours	V, D, descending paralysis	preformed toxin, Foods: improperly canned	stool culture	supportive, anti-toxin given early
***Salmonella**	12-36 hours	D, C, F, V, H	tissue invasion, Food: poultry, egg, raw milk, cross contamination	stool culture, serotype, PFGE	Antibiotics if extra-intestinal spread. Ab may prolong shedding
Enterhemoraghic *Escherichia coli 0157:H7	48-96 hours	D (bloody), C, H	cytotoxin, Foods: beef, raw milk	stool culture and serotype	supportive, monitor renal fxn HUS complication
****Campylobacter jejuni***	2-5 days	D,C,F	Foods: poultry, unpasteurized milk	stool culture	If severe - erythromycin or quinolones
****Vibrio vulnificus***	1-7 days	V,D,C, bacteremia, wound lesions	Foods: undercooked or raw shellfish, esp oysters	stool, wound or blood cultures	supportive and antibiotics (tetracyclin, doxycyclin, ceftriazimide)
****Listeria monocytogenes***	9-48 hours (2-6 weeks invasive dx)	F, N,D muscle aches	complications for pregnant women Foods: soft cheese, deli meats, unpasteurized milk	blood or CSF cultures	supportive and antibiotics. IV ampicillin, penicillin for invasive dx)
Norovirus	16-48 hours	N,V,C,D	infected food handlers and person to person	if outbreak - stool by RT-PCR	supportive
****HEPATITIS A**	15-50 days (28 days)	N, V fatigue, dark urine, jaundice	shellfish, infected foodhandlers	anti HAV IgM	supportive, immunization, IG given to contacts within 14 days

C = cramps, D=diarrhea, N=nausea, V=vomitting, H=headache, F = fever

* denotes reportable disease, ** RAPIDLY REPORTABLE

Disease spotlight = *Viral Meningitis*

Although Viral Meningitis is not reportable, last summer RAHD was notified of an increase of cases common in day care centers and summer camps. Affecting mostly children, this disease is important because of the similar presentation as bacterial meningitis (meningococcal) and WNV. Signs and symptoms include severe headache, stiff neck, sensitivity to bright lights, drowsiness, confusion and nausea and/or vomiting.

Viral (aseptic) meningitis is usually caused by seasonal viruses called enteroviruses (increased in summer and fall). Enterovirues have an incubation period between 3-7 days and are communicable up to 10 days after symptoms resolve. Enteroviruses are spread through direct contact with respiratory secretions (e.g., saliva, sputum, or nasal mucus) of an infected person as well as contaminated surfaces. The virus can also be found in the stool. The virus is spread through the fecal-oral route mainly among small children who are not yet toilet trained.

Enteroviruses are detected in the CSF of infected persons. Treatment is supportive care, fluids and rest. **The best prevention is handwashing & disinfection of contaminated environmental surfaces.**

Coming Soon: Forensic Epidemiology Course — September 13-14th 2004

The Virginia Department of Health and the Rappahannock Area Health District will be offering a 2 day course on Forensic Epidemiology for public health professionals, hospital and Emergency Department staff, Medical Examiners, and law enforcement/fire/ems partners. This training is designed to enhance and strengthen the joint efficiency and collaboration as all the entities simultaneously respond to biological threats or attacks. The course will be held at Mary Washington College from 8-5pm on September 13-14. The training session is free with lunch provided both days. CME and CEU's will be provided. For more information, please contact Joe Saitta @ 540-899-4797.

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Please visit us on the web @
www.vdh.virginia.gov

Selected Reportable Diseases in RAHD - January-June 2004 vs 2003*

DISEASE	YTD 2004	YTD 2003	Diff	% change	YTD 2003 State
AIDS	7	9	-2	-22.2%	433
Campylobacter	9	14	-5	-35.7%	294
Chlamydia Trachomatis	314	273	41	15.0%	9691
E. Coli (0157:H7)	0	1	-1	-	17
Giardiasis	8	11	-3	-27.3%	155
Gonorrhea	96	82	14	17.1%	4395
HAEMOPHILUS INFLUENZAE, INVASIVE	1	2	-1	-50.0%	-
HIV Infection	8	5	3	60.0%	387
HEPATITIS A (IgM+)	2	1	1	-	43
Legionelliosis	1	3	-2	-66.7%	-
Listeriosis	1	0	1	-	-
Lyme Disease¶	10	6	4	66.7%	-
MENINGOCOCCAL INFECTION	0	0	0	-	17
RABIES (Animal)	11	15	-4	-26.7%	275
Rocky Mountain Spotted Fever	2	1	1	100.0%	-
Salmonellosis	9	23	-14	-60.9%	360
Shigellosis	2	2	0	0.0%	192
Streptococcal Disease, Group A, invasive	12	12	0	0.0%	-
Streptococcus pneumoniae, invasive <5 yrs	4	2	2	100.0%	-
Syphilis, total early	0	1	-1	-100.0%	84
TUBERCULOSIS DISEASE (Mycobacteria)	3	1	2	200.0%	112
West Nile Virus (WNV)	0	0	0	-	3
Total	620	602	18	3.0%	

± Data is provisional

¶ Only 3 confirmed cases for VDH/CDC surveillance